

CLAIMS

What is claimed is:

1. A brine solution comprising:
at least about 40% by weight of a phosphate salt mixture wherein the phosphate salt mixture is comprised of at least two phosphate salts selected from the group consisting of monosodium phosphate, disodium phosphate, trisodium phosphate, monopotassium phosphate, dipotassium phosphate, and tripotassium phosphate.
2. The brine solution of claim 1 further comprising an acid selected from the group consisting of acetic acid, adipic acid, citric acid, nitric acid, phosphoric acid, and sulfuric acid.
3. The brine solution of claim 1, wherein the brine solution comprises:
 - a) dipotassium phosphate in the range of about 20 to 40% by weight per weight of the brine solution;
 - b) disodium phosphate in the range of about 10 to 30% by weight per weight of the brine solution; and
 - c) monosodium phosphate in the range of about 10 to 30% by weight per weight of the brine solution.
4. The brine solution of claim 1, wherein the brine solution comprises:
 - a) about 30% dipotassium phosphate by weight per weight of the brine solution;
 - b) about 15% disodium phosphate by weight per weight of the brine solution; and
 - c) about 15% monosodium phosphate by weight per weight of the brine solution.
5. The brine solution of claim 1, wherein the brine solution comprises:
 - a) dipotassium phosphate in the range of about 33 to 50% by weight per weight of the brine solution;
 - b) disodium phosphate in the range of about 1.5 to 25% by weight per weight of the brine solution; and

c) monosodium phosphate in the range of about 5.5 to 25% by weight per weight of the brine solution.

6. The brine solution of claim 1, wherein the brine solution comprises:

- a) about 42% dipotassium phosphate by weight per weight of the brine solution;
- b) about 3% disodium phosphate by weight per weight of the brine solution; and
- c) about 12% monosodium phosphate by weight per weight of the brine solution.

7. The brine solution of claim 1, wherein the brine solution comprises:

- a) dipotassium phosphate in the range of about 35 to 60% by weight per weight of the brine solution; and
- b) monosodium phosphate in the range of about 5 to 40% by weight per weight of the brine solution.

8. The brine solution of claim 1, wherein the brine solution comprises:

- a) about 42% dipotassium phosphate by weight per weight of the brine solution; and
- b) about 10% monosodium phosphate by weight per weight of the brine solution.

9. A food product comprising the brine solution of claim 1.

10. The food product of claim 9, wherein the food product is a meat product.

11. A dry phosphate salt mixture comprising:

at least two phosphate salts selected from the group consisting of monosodium phosphate, disodium phosphate, trisodium phosphate, monopotassium phosphate, dipotassium phosphate, and tripotassium phosphate.

12. The dry phosphate salt mixture of claim 11 further comprising an acid selected from the group consisting of acetic acid, adipic acid, citric acid, nitric acid, phosphoric acid, and sulfuric acid.

13. The dry phosphate salt mixture of claim 11, wherein the dry phosphate salt mixture comprises:

- a) dipotassium phosphate in the range of about 30 to 50% by weight per weight of the dry phosphate salt mixture;
- b) disodium phosphate in the range of about 10 to 25% by weight per weight of the dry phosphate salt mixture; and
- c) monosodium phosphate in the range of about 10 to 25% by weight per weight of the dry phosphate salt mixture.

14. The dry phosphate salt mixture of claim 11, wherein the dry phosphate salt mixture comprises:

- a) about 50% dipotassium phosphate by weight per weight of the dry phosphate salt mixture;
- b) about 25% disodium phosphate by weight per weight of the dry phosphate salt mixture; and
- c) about 25% monosodium phosphate by weight per weight of the dry phosphate salt mixture.

15. The dry phosphate salt mixture of claim 11, wherein the dry phosphate salt mixture comprises:

- a) dipotassium phosphate in the range of about 50 to 74% by weight per weight of the dry phosphate salt mixture;
- b) disodium phosphate in the range of about 1 to 5% by weight per weight of the dry phosphate salt mixture; and
- c) monosodium phosphate in the range of about 10 to 21% by weight per weight of the dry phosphate salt mixture.

16. The dry phosphate salt mixture of claim 11, wherein the dry phosphate salt mixture comprises:

- a) about 74% dipotassium phosphate by weight per weight of the dry phosphate salt mixture;
- b) about 5% disodium phosphate by weight per weight of the dry phosphate salt mixture; and
- c) about 21% monosodium phosphate by weight per weight of the dry phosphate salt mixture.

17. The dry phosphate salt mixture of claim 11, wherein the dry phosphate salt mixture comprises:

- a) dipotassium phosphate in the range of about 60 to 81% by weight per weight of the dry phosphate salt mixture; and
- b) monosodium phosphate in the range of about 10 to 19% by weight per weight of the dry phosphate salt mixture.

18. The dry phosphate salt mixture of claim 11, wherein the dry phosphate salt mixture comprises:

- a) about 81% dipotassium phosphate by weight per weight of the dry phosphate salt mixture; and
- b) about 19% monosodium phosphate by weight per weight of the dry phosphate salt mixture.

19. A method of preparing a brine solution comprising the step of:

combining with a solvent at least about 40% by weight of a phosphate salt mixture wherein the phosphate salt mixture is selected from at least two phosphate salts selected from the group consisting of monosodium phosphate, disodium phosphate, trisodium phosphate, monopotassium phosphate, dipotassium phosphate, and tripotassium phosphate.

20. The method of claim 19, wherein the solvent is water.

21. The method of claim 19, wherein the brine solution comprises:

- a) dipotassium phosphate in the range of about 20 to 40% by weight per weight of the brine solution;
- b) disodium phosphate in the range of about 10 to 30% by weight per weight of the brine solution; and
- c) monosodium phosphate in the range of about 10 to 30% by weight per weight of the brine solution.

22. The method of claim 19, wherein the brine solution comprises:

- a) about 30% dipotassium phosphate by weight;
- b) about 15% disodium phosphate by weight; and
- c) about 15% monosodium phosphate by weight.

23. The method of claim 19, wherein the brine solution comprises:

- a) dipotassium phosphate in the range of about 33 to 50% by weight per weight of the brine solution;
- b) disodium phosphate in the range of about 1.5 to 25% by weight per weight of the brine solution; and
- c) monosodium phosphate in the range of about 5.5 to 25% by weight per weight of the brine solution.

24. The method of claim 19, wherein the brine solution comprises:

- a) about 42% dipotassium phosphate by weight;
- b) about 3% disodium phosphate by weight; and
- c) about 12% monosodium phosphate by weight.

25. The method of claim 19, wherein the brine solution comprises:

- a) dipotassium phosphate in the range of about 35 to 60% by weight per weight of the brine solution; and
- b) monosodium phosphate in the range of about 5 to 40% by weight per weight of the brine solution.

26. The method of claim 19, wherein the brine solution comprises:
 - a) about 42% dipotassium phosphate by weight; and
 - b) about 10% monosodium phosphate by weight.
27. The method of claim 19, wherein the collagen is in contact with a food product.
28. The method of claim 27, wherein the food product is coextruded with the collagen.
29. A method of coagulating collagen comprising the steps of:
 - a) combining with a solvent at least about 40% by weight of a phosphate salt mixture wherein the phosphate salt mixture is selected from at least two phosphate salts selected from the group consisting of monosodium phosphate, disodium phosphate, trisodium phosphate, monopotassium phosphate, dipotassium phosphate, and tripotassium phosphate to form a brine solution; and
 - b) contacting the brine solution with collagen.
30. The method of claim 29, wherein the solvent is water.
31. The method of claim 29, wherein the brine solution comprises:
 - a) dipotassium phosphate in the range of about 20 to 40% by weight per weight of the brine solution;
 - b) disodium phosphate in the range of about 10 to 30% by weight per weight of the brine solution; and
 - c) monosodium phosphate in the range of about 10 to 30% by weight per weight of the brine solution.
32. The method of claim 29, wherein the brine solution comprises:
 - a) about 30% dipotassium phosphate by weight;
 - b) about 15% disodium phosphate by weight; and

- c) about 15% monosodium phosphate by weight.

33. The method of claim 29, wherein the brine solution comprises:

- a) dipotassium phosphate in the range of about 33 to 50% by weight per weight of the brine solution;
- b) disodium phosphate in the range of about 1.5 to 25% by weight per weight of the brine solution; and
- c) monosodium phosphate in the range of about 5.5 to 25% by weight per weight of the brine solution.

34. The method of claim 29, wherein the brine solution comprises:

- a) about 42% dipotassium phosphate by weight;
- b) about 3% disodium phosphate by weight; and
- c) about 12% monosodium phosphate by weight.

35. The method of claim 29, wherein the brine solution comprises:

- a) dipotassium phosphate in the range of about 35 to 60% by weight per weight of the brine solution; and
- b) monosodium phosphate in the range of about 5 to 40% by weight per weight of the brine solution.

36. The method of claim 29, wherein the brine solution comprises:

- a) about 42% dipotassium phosphate by weight; and
- b) about 10% monosodium phosphate by weight.

37. The method of claim 29, wherein the collagen is in contact with a food product.

38. The method of claim 37, wherein the food product is coextruded with the collagen.

39. A method of preparing a food product comprising:

a) combining with a solvent at least about 40% by weight of a phosphate salt mixture wherein the phosphate salt mixture is selected from at least two phosphate salts selected from the group consisting of monosodium phosphate, disodium phosphate, trisodium phosphate, monopotassium phosphate, dipotassium phosphate, and tripotassium phosphate to form a brine solution;

- b) combining a food product with collagen; and
- c) contacting the brine solution with the collagen and the food product.

40. The method of claim 39, wherein the solvent is water.

41. The method of claim 39, wherein the brine solution comprises:

- a) dipotassium phosphate in the range of about 20 to 40% by weight per weight of the brine solution;
- b) disodium phosphate in the range of about 10 to 30% by weight per weight of the brine solution; and
- c) monosodium phosphate in the range of about 10 to 30% by weight per weight of the brine solution.

42. The method of claim 39, wherein the brine solution comprises:

- a) about 30% dipotassium phosphate by weight;
- b) about 15% disodium phosphate by weight; and
- c) about 15% monosodium phosphate by weight.

43. The method of claim 39, wherein the brine solution comprises:

- a) dipotassium phosphate in the range of about 33 to 50% by weight per weight of the brine solution;
- b) disodium phosphate in the range of about 1.5 to 25% by weight per weight of the brine solution; and
- c) monosodium phosphate in the range of about 5.5 to 25% by weight per weight of the brine solution.

44. The method of claim 39, wherein the brine solution comprises:
- a) about 42% dipotassium phosphate by weight;
 - b) about 3% disodium phosphate by weight; and
 - c) about 12% monosodium phosphate by weight.
45. The method of claim 39, wherein the brine solution comprises:
- a) dipotassium phosphate in the range of about 35 to 60% by weight per weight of the brine solution; and
 - b) monosodium phosphate in the range of about 5 to 40% by weight per weight of the brine solution.
46. The method of claim 39, wherein the brine solution comprises:
- a) about 42% dipotassium phosphate by weight; and
 - b) about 10% monosodium phosphate by weight.
47. The method of claim 39, wherein the collagen is in contact with a food product.
48. The method of claim 47, wherein the food product is coextruded with the collagen.